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1600

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/672,126B

DATE: 06/10/2003 P.6  
TIME: 08:53:27

Input Set : C:\seqlist.txt

Output Set: N:\CRF4\06102003\I672126B.raw

```

4 <110> APPLICANT: Hartmann, Gunther
5      Bratzler, Robert L.
6      Krieg, Arthur
9 <120> TITLE OF INVENTION: Methods Related to Immunostimulatory
10     Nucleic Acid-Induced Interferon
13 <130> FILE REFERENCE: C1039/7044
15 <140> CURRENT APPLICATION NUMBER: 09/672,126B
17 <141> CURRENT FILING DATE: 2000-09-27
19 <150> PRIOR APPLICATION NUMBER: 60/156,147
20 <151> PRIOR FILING DATE: 1999-09-29
22 <160> NUMBER OF SEQ ID NOS: 169
24 <170> SOFTWARE: FastSEQ for Windows Version 3.0
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 20
28 <212> TYPE: DNA
29 <213> ORGANISM: Artificial Sequence
31 <220> FEATURE:
32 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 34 <221> NAME/KEY: misc_feature
35 <222> LOCATION: (1)...(2)
36 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 38 <221> misc_feature
39 <222> LOCATION: (3)...(14)
40 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 42 <221> misc_feature
43 <222> LOCATION: (15)...(19)
44 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 46 <221> misc_feature
47 <222> LOCATION: (20)...(20)
48 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 50 <400> 1
51     ggggtcaacg ttgagggggg
53 <210> SEQ ID NO: 2
54 <211> LENGTH: 24
55 <212> TYPE: DNA
56 <213> ORGANISM: Artificial Sequence
58 <220> FEATURE:
59 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 61 <221> NAME/KEY: misc_feature
62 <222> LOCATION: (1)...(24)
63 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 65 <400> 2
66     tcgtcgtttt gtcgttttgc cgtt

```

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```

68 <210> SEQ ID NO: 3
69 <211> LENGTH: 20
70 <212> TYPE: DNA
71 <213> ORGANISM: Artificial Sequence
73 <220> FEATURE:
74 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 76 <221> NAME/KEY: misc_feature
77 <222> LOCATION: (1)...(20)
78 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 80 <400> 3
81   ggggtcgtcg ttttgggggg                20
83 <210> SEQ ID NO: 4
84 <211> LENGTH: 24
85 <212> TYPE: DNA
86 <213> ORGANISM: Artificial Sequence
88 <220> FEATURE:
89 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 91 <221> NAME/KEY: misc_feature
92 <222> LOCATION: (1)...(24)
93 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 95 <400> 4
96   tcgtcgtttt gtcgttttgg gggg                24
98 <210> SEQ ID NO: 5
99 <211> LENGTH: 20
100 <212> TYPE: DNA
101 <213> ORGANISM: Artificial Sequence
103 <220> FEATURE:
104 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 106 <221> NAME/KEY: misc_feature
107 <222> LOCATION: (1)...(20)
108 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 110 <400> 5
111   ggggtcgacg tcgagggggg                20
113 <210> SEQ ID NO: 6
114 <211> LENGTH: 20
115 <212> TYPE: DNA
116 <213> ORGANISM: Artificial Sequence
118 <220> FEATURE:
119 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 121 <221> NAME/KEY: misc_feature
122 <222> LOCATION: (1)...(20)
123 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 125 <400> 6
126   ggggtcatcg atgagggggg                20
128 <210> SEQ ID NO: 7
129 <211> LENGTH: 20
130 <212> TYPE: DNA
131 <213> ORGANISM: Artificial Sequence
133 <220> FEATURE:

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```

134 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 136 <221> NAME/KEY: misc_feature
137 <222> LOCATION: (1)...(2)
138 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 140 <221> misc_feature
141 <222> LOCATION: (3)...(14)
142 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 144 <221> misc_feature
145 <222> LOCATION: (15)...(19)
146 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 148 <221> misc_feature
149 <222> LOCATION: (20)...(20)
150 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 152 <400> 7
153 gggggacgat cgtcggggggg 20
155 <210> SEQ ID NO: 8
156 <211> LENGTH: 20
157 <212> TYPE: DNA
158 <213> ORGANISM: Artificial Sequence
160 <220> FEATURE:
161 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 163 <221> NAME/KEY: misc_feature
164 <222> LOCATION: (1)...(20)
165 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 167 <400> 8
168 gggggtcgta cgacggggggg 20
170 <210> SEQ ID NO: 9
171 <211> LENGTH: 22
172 <212> TYPE: DNA
173 <213> ORGANISM: Artificial Sequence
175 <220> FEATURE:
176 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 178 <221> NAME/KEY: misc_feature
179 <222> LOCATION: (1)...(2)
180 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 182 <221> misc_feature
183 <222> LOCATION: (3)...(16)
184 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 186 <221> misc_feature
187 <222> LOCATION: (17)...(21)
188 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 190 <221> misc_feature
191 <222> LOCATION: (22)...(22)
192 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 194 <400> 9
195 gggggacgat atcgtcgggg gg 22
197 <210> SEQ ID NO: 10
198 <211> LENGTH: 22
199 <212> TYPE: DNA

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200 <213> ORGANISM: Artificial Sequence
202 <220> FEATURE:
203 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 205 <221> NAME/KEY: misc_feature
206 <222> LOCATION: (1)...(2)
207 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 209 <221> misc_feature
210 <222> LOCATION: (3)...(16)
211 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 213 <221> misc_feature
214 <222> LOCATION: (17)...(21)
215 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 217 <221> misc_feature
219 <222> LOCATION: (22)...(22)
220 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 222 <400> 10
223   gggggacgac gtcgtcgggg gg                                22
225 <210> SEQ ID NO: 11
226 <211> LENGTH: 22
227 <212> TYPE: DNA
228 <213> ORGANISM: Artificial Sequence
230 <220> FEATURE:
231 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 233 <221> NAME/KEY: misc_feature
234 <222> LOCATION: (1)...(2)
235 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 237 <221> misc_feature
238 <222> LOCATION: (3)...(16)
239 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 241 <221> misc_feature
242 <222> LOCATION: (17)...(21)
243 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 245 <221> misc_feature
246 <222> LOCATION: (22)...(22)
247 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 249 <400> 11
250   gggggacgag ctcgtcgggg gg                                22
252 <210> SEQ ID NO: 12
253 <211> LENGTH: 20
254 <212> TYPE: DNA
255 <213> ORGANISM: Artificial Sequence
257 <220> FEATURE:
258 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 260 <221> NAME/KEY: misc_feature
261 <222> LOCATION: (1)...(2)
262 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 264 <221> misc_feature
265 <222> LOCATION: (3)...(14)
266 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.

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Input Set : C:\seqlist.txt

Output Set: N:\CRF4\06102003\I672126B.raw

```

W--> 268 <221> misc_feature
      269 <222> LOCATION: (15)...(19)
      271 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 273 <221> misc_feature
      274 <222> LOCATION: (20)...(20)
      275 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 277 <400> 12
      278 ggggggacgta cgtcggggggg
      280 <210> SEQ ID NO: 13
      281 <211> LENGTH: 20
      282 <212> TYPE: DNA
      283 <213> ORGANISM: Artificial Sequence
      285 <220> FEATURE:
      286 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 288 <221> NAME/KEY: misc_feature
      289 <222> LOCATION: (1)...(2)
      290 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 292 <221> misc_feature
      293 <222> LOCATION: (3)...(15)
      294 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 296 <221> misc_feature
      297 <222> LOCATION: (16)...(19)
      298 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 300 <221> misc_feature
      301 <222> LOCATION: (20)...(20)
      302 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 304 <400> 13
      305 ggggggacgat cgttggggggg
      307 <210> SEQ ID NO: 14
      308 <211> LENGTH: 20
      309 <212> TYPE: DNA
      310 <213> ORGANISM: Artificial Sequence
      312 <220> FEATURE:
      313 <223> OTHER INFORMATION: Synthetic Oligonucleotide
W--> 315 <221> NAME/KEY: misc_feature
      316 <222> LOCATION: (1)...(2)
      317 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 319 <221> misc_feature
      320 <222> LOCATION: (3)...(15)
      321 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 323 <221> misc_feature
      324 <222> LOCATION: (16)...(19)
      325 <223> OTHER INFORMATION: Backbone has phosphorothioate linkages.
W--> 327 <221> misc_feature
      328 <222> LOCATION: (20)...(20)
      329 <223> OTHER INFORMATION: Backbone has phosphodiester linkages.
W--> 331 <400> 14
      332 ggggaacgat cgtcggggggg
      334 <210> SEQ ID NO: 15

```

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/672,126B

DATE: 06/10/2003  
TIME: 08:53:28

Input Set : C:\seqlist.txt  
Output Set: N:\CRF4\06102003\I672126B.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:158; N Pos. 7,10

Seq#:168; N Pos. 4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23

Seq#:169; N Pos. 4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,27

Seq#:169; N Pos. 28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

## VERIFICATION SUMMARY

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PATENT APPLICATION: US/09/672,126B

TIME: 08:53:28

Input Set : C:\seqlist.txt

Output Set: N:\CRF4\06102003\I672126B.raw

L:34 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:38 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:1  
L:42 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:1  
L:46 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:1  
L:50 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:1  
L:61 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:65 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2  
L:76 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:80 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:3  
L:91 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:95 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:4  
L:106 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:110 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:5  
L:121 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:125 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:6  
L:136 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:140 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:7  
L:144 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:7  
L:148 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:7  
L:152 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:7  
L:163 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:167 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:8  
L:178 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:182 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:9  
L:186 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:9  
L:190 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:9  
L:194 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:9  
L:205 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:209 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:10  
L:213 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:10  
L:217 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:10  
L:222 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:10  
L:233 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:237 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11  
L:241 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11  
L:245 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11  
L:249 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11  
L:260 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:264 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:12  
L:268 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:12  
L:273 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:12  
L:277 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:12  
L:288 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:292 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:13  
L:296 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:13  
L:300 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:13  
L:304 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:13  
L:315 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!

**VERIFICATION SUMMARY**

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Input Set : C:\seqlist.txt

Output Set: N:\CRF4\06102003\I672126B.raw

L:319 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:14  
L:323 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:14  
L:327 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:14  
L:331 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:14  
L:342 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:346 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:15  
L:350 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:15  
L:354 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:15  
L:358 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:15  
L:369 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:373 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:16  
L:377 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:16  
L:381 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:16  
L:385 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:16  
L:396 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:400 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:17  
L:404 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:17  
L:408 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:17  
L:412 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:17  
L:423 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:450 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:477 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:504 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:531 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:558 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:585 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:612 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:639 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:666 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:693 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:716 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:743 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:770 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:797 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:824 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:851 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:878 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:905 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:932 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:1312 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:1833 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2167 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2182 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2217 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2244 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2271 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2298 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2313 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2328 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!

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L:2343 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2370 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2397 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:2449 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:158 after pos.:0  
L:2630 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:168 after pos.:0  
L:2651 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:169 after pos.:0